

worthy foe we British have to deal with here; by such to-day are we hedged round in India.

September 29th.—Last night the brilliant flitting fireflies by their glimmering light enabled us to read on board our boats. Thermometer in sun 110 deg., shade 92 deg., weather dry. Another case of sun stroke has occurred to-day. We have had a very large accession to our numbers both on the "duty roll" and "sick report" to-day, from the boats of other ships. The latter with a variety of affections. September 30th.—Glass in sun 112 deg., shade 92 deg.; weather dry, cloudless. This day have occurred four more cases of cholera, and severe diarrhoea, attended by the most distressing spasms. The cholera here, more so than any I have seen elsewhere, is early marked by a symptom never forgotten when once seen.

The iris, no matter how dark in health, becomes quite pale and bloodless, even though naturally black, lighter than an Albinos. So with the surfaces generally both mucous and cuticular, all are of their vascular and nervous essences quite bereft, which retreating evidently inward, as we have by post-mortem researches found the blood, at any rate palpably, and probably the impalpable nervous fluid too, accumulated upon the vital inner organs and glands, and nervous and sanguiferous centres in this fell disease, suggested in these instances to me a natural hint, which despite the many theories of cholera, its cause and treatment, by purely theoretic writers, I have acted on.

A CRUISE IN THE CORAL SEA.

ADVENTURE may be likened to a Camera Obscura or a Photographic lens, through which a portion of mankind see the distant parts of the world.

Stay-at-home travellers read voyages to far-off lands and islands with an avidity that few novelists are aware of. A good seaman stands high in their estimation, as indeed he deserves to do, for his trials are severe and harassing, particularly while employed in exploring unknown and dangerous seas. The narratives of our modern navigators are as full of thrilling interest as those of Dampier, Wallis, and Cooke, for the age of maritime romantic adventure is not passed while the Pacific ocean with its ten thousand isles is unexplored.

Again, who can forget the voyage of the Fox, or the account of McClintock's search after the Franklin relics? We could cite many other instances, of stirring adventures, but

without trespassing upon the reader's patience, let us briefly relate a most useful cruise amongst the singular lagoons, isles, sands, rocks, and shoals that all but prevent navigation in the Coral sea.

It will be as well to state that vessels from New South Wales, bound to any of the ports of India during the south-east monsoon, (that is from the months of April to October inclusive), find it more advantageous to pass by Torres straits. At that period of the year strong southerly winds prevail on the southern coasts of Australia, rendering a passage to the westward round Cape Leuwin (the south-west point of Australia) impracticable unless in a fast and well found ship.

In proceeding to Torres Straits, two routes present themselves to the navigator; one called the inner route, or along the eastern shores of Australia, within the Barrier reefs, and entering near Break-sea-Spit, in 24 d. South latitude; the other by stretching off to the eastward of the Barrier reefs, steering midway between them and New Caledonia, and then entering Torres Straits by an opening through the Barrier Reef in 11 d. 36 m. south, where a beacon was erected about sixteen years ago by Captain F. P. Blackwood, R.N., in that latitude, on Raina Island.

We are now in a position to comprehend the nature of the duties so ably performed by Captain Denham, F.R.S., of Her Majesty's ship Herald, who, following in the wake of Captain P. P. King, R.N., and Captain Blackwood, has more than half robbed the Coral sea of its terrors.

After leaving Port Jackson, and experiencing almost every variety of weather from calms to gales, the Herald entered the chops of the Coral Sea between the "Cate" and "Bellona" reefs where at 225 miles apart from the Southern entrance to the "Outer route," she was impelled by a steady S. E. trade wind uninfluenced by any current, proving that no current exists in the fairway of this route. This is now an ascertained fact, as the track of this ship crossed those of the same vessel made in the months of October, 1858, and of April, May, June, August, and September, 1859.

It was remarked that the turbulence of the sea subsided at the parallel of 23 d. S., which brought the Bellonas in the wind's eye of the Herald, and the calming effects of this reef, although 70 miles distant, was very perceptible.

It is pleasing to see with what confidence Capt. Denham threaded the intricate navigation of the Coral Sea, guided by his own chart, and which, when published, will be one of the greatest boons to all mariners passing through the outer route.

Some of the incidents of this long cruise are interesting. Landing upon Mellish Cay with Messrs. Parsons and Hixson, to obtain a first suite of rating sights, Capt. Denham found the Beacon he had built up of the wreck of the Duroc, in good preservation, though so bespattered and whitened by the roosting of seafowl as to render it

less effective in the distance than when he had left it many months before.

The compost of fowls' manure had, however, very much preserved it. Nothing had transpired, either by the hand of man or by tempest, to disturb the relics of his visit. The tank and cooking apparatus which Capt Denham had arranged within the Beacon framework, together with the bottled bend of its position, all remained as he had left them, and long may they continue so, as the benevolent exertions of Capt. Denham in erecting a hospice on this barren island is most praiseworthy. It would seem, however, that this place, desolate as it is, is the resort of birds of the gannet and noddy species. On landing it was found that thousands of them were in the several stages of laying and hatching, and that they came off in large flights to roost upon the ship's spars. Hundreds of the young birds were brought off by the seamen every night, and furnished a palatable meal in addition to the ordinary ship's diet.

One of the important duties performed by Captain Denham in this dangerous sea has been to test the existence of certain reefs laid down even in the best charts. This task required great care and very exact data, thus with a satisfactory start, in regard to meridian date, the Herald left a certain reef known as "Mellish" reef on purpose to test the whereabouts of a certain reef marked in the charts as "Young's reef," when after a most diligent search Captain Denham declares the non existence of Young's reef, and says that the supposed discoverer of Young's reef must have been Mellish reef without his being aware of his 10 miles error in latitude, and 34 of longitude.

On another occasion Captain Denham had some doubts about the position of two dangerous reefs known as Lelion and Alert reefs, and two days operations confirmed his suspicions that they blended in one.

Having stretched along the "Lelion" to the north westward until within five miles of "Alert's" assigned position, and then placing the ship upon that position Captain Denham had no sign of another reef. Hence he designed the northern elbow as "Alert's Lelion," which, as deduced from an excellent series of observations upon the Cay, lies in 17 d. 10 m. 30 s. S. longitude, and 152 d. 13 m. E., with no soundings in 230 fathoms, at three-quarters of a mile off.

The surface of Alert Lelion Cay is composed of white coral grit, and only six feet elevated above the sea's level, and was furrowed and pitted by green turtle, of which nine were taken, and being upwards of 900 pounds weight each, afforded some days ample nourishment to all hands, which it seems was a seasonable relief, as the sharks in the Coral Sea defied landing any of the fish hooked. A fact well worth knowing is, a boat's crew landing on any of the leeward cays, and beaching their boat and keeping quiet until midnight, can turn up

almost any number of turtle after they crawl up and settle for the night to lay and cover up their eggs.

Again, Captain Denham disposes of another imaginary danger, pricked off in the best charts as the "Diana" bank. After traversing over and around its assumed spot, embracing an area of fifteen miles, he could trace nothing from the masthead nor obtain soundings in 200 fathoms. This gallant and indefatigable navigator thinks that, like the reef "Alert" in relation to the "Lelion," that the "Diana" bank, or sand islet, is identical with the Willis islets, said to be lying some forty miles to the south-west. Accordingly, after a fearfully anxious night in this dangerous sea, he discovered a long low sand cay, treading one mile east and west, with a reef sweeping three miles east and south east of it.

In working up against a south-easter, to obtain easy anchorage, several dangerous looking lumps of coral rock stood abruptly up upon a thirty fathom platform of coral grit, and immediately eastward a terrible cluster of absolute danger blocks could be easily traced.

With his usual zeal, however, Captain Denham, in one day's operations, determined the geographical position and contour of this dangerous group, which proved to be as he had conjectured, "Willis's" islands, the centremost being situated in lat. 16° d. 30 m. south, long. 150° d. 2 m. 24 east, from which the group spreads, north six miles, and south $4\frac{1}{2}$ miles.

The aspect of these little islets is very singular. The area of the herbage surface of Willis' islets does not spread over more than 400 yards, nor exceed 33 ft. elevation above high water level. Their verdure is sharply brought out by a belt of bleached coral fifty yards in breadth, which is skirted by a flat half-tide fungi reef, spreading off one third of a mile. The manner in which these islets are heaped up in terraces, in Captain Denham's opinion, is the result of the long fetch and weight of the billows that fall upon their weather aspects. He had, however, especial evidence that such was the cause, on beholding a ship's teak mainmast, and some one of which, with its bleached roots and branches, measured 90 feet by 4 ft. girth hove up above highwater mark. The teak mast indicated a wreck on the spot, as it would not float in still water, while the trees indicated an astonishing drift, for the most reasonable assumption is that they must have journeyed 960 miles, threading their way through the reefs between New Caledonia, unassisted by currents across the "outer route," or they must have been uprooted in the New Guinea direction 300 miles to the northward, and been impelled by those periodical winds, said to blow from the north-west, but of which we have at present no reliable data or experience, and the Barrier reef would prevent them coming from Australia.

The sea fowl congregated on Willis's group are of the same variety as at the windward cays. Turtle also abound in astonishing numbers. A boat's crew landing an hour before sunset could turn by

midnight more than would load her by daybreak. It should be noticed that these islets ought not be passed nearer than a mile, nor any ship anchorage be taken up in less than 27 fathoms, because there are some two or three fathom stragglers which she might swing foul of or be hampered by when getting under weigh upon shift of wind, and anchoring would be necessary, if having to visit this group to look for a missing crew, or to get a supply of turtle. As was his custom, Captain Denham left a bottled paper, as a clue, in case of accident to the *Herald*, before leaving these dangerous seas.

After getting clear of the Willis group, which may now be recorded as stretching eleven miles S. by W. and N. by E., between 16 d. 7 s. and 150 d. 5 m. East, and 16 d. 8 m. South and 150 d. 1 m. east, the *Herald* renewed her search for the Diana reef, although Captain Denham had previously come to the conclusion of its non-existence, resolving at the same time on a north-eastern detour to determine the existence of "Bougainville" Reef, of which great doubts were entertained. In order, therefore, to clear up this important particular, the *Herald* was coaxed up against a light easterly breeze, when a couple of anxious nights brought the ship through the doubtful ground, and placed her on the desired parallel, 15 d. 41 s., and twenty-five miles eastward of the assigned meridian (150 d. 25 s.) of Diana, which with a ten mile sweep of horizon, showed its non-existence as far as 40 miles of longitude east of the assigned position of this reef; and by sailing west upon its parallel, while commanding a ten mile view north and south, with an occasional deep sea cast of 200 fathoms, positive evidence was obtained, combined with the *Herald*'s former traverse, that the "Diana" did not exist eastward. When, in order that the like test should be carried out westward, Captain Denham stood off and on during the night-time, and, aided by star observation, preserved the parallel so as to resume the search at sunrise, when, with a ten mile sweep of horizon, there was no sign of a reef from the mast head. Its existence is therefore no longer doubtful, and Captain Denham concludes that the cay and reef at the north-eastern extreme of Willis's group must have been seen by the reporter of "Diana," not aware of his being 33 miles north-eastward of his true position.

Having thus swept away so jutting a terror as the Diana presented on the chart between Lelion reef and the Raine Island barrier entrance to Torres straits, the *Herald*'s course was shaped for the position (15d. 13s. S., and 148d. E.) assigned to the northern extreme of Bougainville reefs. After a thirty-eight hours' run the ship had reached within six miles of the assigned position of the reef; and although the stars and morning sun had vouchsafed good checking observations, still no signs of Bougainville's ship-trap more visible—not even the usual sea-fowl, although their prey, the flying-fish, abounded, indicated land or shoal. Captain Denham, however, made it his duty to traverse the meridian of 148d. E., anywhere upon which, for twenty-three miles due south, the reefs might

be expected, as Hersburgh and other charts recorded their existence as far south as 15d. 35m. S.; and although much harassed by evolutions inseparable to varying winds, and squally weather, as well as the terrors of dropping at any moment, of the long hours of darkness, upon such a ship-trap, Captain Denham cut up the whole space assigned to these reefs, even to thirty miles range of longitude, without getting soundings in two hundred fathoms, or tracing the sign of a reef.

The next question to be settled, by actual observation, was the reported danger of Osprey reef, 13d. 57m. S., 146d. 34m. E.; but previous to making for the Raine Island entrance, the Herald traversed ground, similarly diverging southward, as Willis' reefs did on the spot assigned to the Diana banks; but, notwithstanding occasional hopes, from the presence of gannet, noddies, and the frigate-birds, no soundings at two hundred fathoms nor a breaker was traced.

The only way of accounting for the Bougainville report is that, that celebrated navigator must have been quoted a degree out in latitude, and that what has since been reported as a new reef, under the name of "Holme's" reef, is in fact what Bougainville saw. After the precious time lost in the above fruitless searches, Captain Denham was not able to visit the Holme's reef, his primary object being to determine those reefs which formed the western salient confines of the "outer route" question.

With this end in view, the Herald's course was shaped for the reported Osprey Reef, between his then position and Raine Island passage in Torres Straits. This sleepy-looking ship trap was picked up by the the look-out on board the Herald in 13d. 48m. 30s S., and 146d. 29 m. 45s. E. When distant from it four miles, it presented a total absence of breakers, and also that unmistakable patch of green tinted water which these reefs impound. After great difficulty and once grounding, Captain Denham, availing himself of the tranquil state of the sea, treated the Reef-horn as he would an ice-field or berg, and sent a kedge and hawser on shore, and so with the mizen topsail aback to prevent forging, and with 212 fathoms of water alongside, kept his position until the extent of this very dangerous reef was tracked. When having accomplished his arduous task, he gladly "unhooked" from his treacherous acquaintance, and shaped his course for Raine Island entrance to Torres Straits, then 200 miles distant.

Osprey Reef, in form, is an equilateral triangle of subtended five-mile sides, its western margin gently concaved between extremes bearing north and south of each other. Its north-eastern and south-western margins convexing to an apex on the east, becomes a protruding, dangerous elbow, regarding the "outer route" passage, and demands special notice of its latitude 13d. 51m. S., and longitude 146d. 36m. S., as deduced from observations at its northern horn, which proved to be in latitude 13d. 48m. 4s. S., longitude

146 d. 31 m. 50 s. E., where the variation was found to be 6 d. 23 m. E. with a tide hour of 8h. 36m., and a rise and fall of 6 feet.

The margin rims of this dangerous reef are as smooth as concrete pavement, and barely show at half-tide while at high water, but three "niggerhead" blocks of blackened coral stand up a couple of feet to view.

The eastern elbow betrays itself by a dancing breaker, but the area of this reef is chiefly indicated by the green-tinted water, embraced within the triangle of their reef-lips over a plateau of bright coral grit, into which boats can find smooth anchorage in two and three fathoms ; but no soundings can be met with at a ship's length outside this treacherous reef.

After leaving Osprey Reef, the Herald made sail for Raine Island, passing through the veins of drift wood, leaves, and weed. Trees as large as those seen on Willis's Island were floating by the ship with birds nestling in the roots and perched upon the branches, somewhat accounting for the transit and navigation of land birds at distances beyond their known powers of flight.

In the May number of this magazine for the year 1857, the reader will find a paper called "Hospices on Barren Islands," in which an account is given of a beacon erected on Raine Island by Her Majesty's ships the Fly and Bramble, assisted by the Colonial Government of New South Wales. Captain Denham visited this tower, which is of the utmost importance as a beacon, as no appearance of an island or sign of the reefs which form this bright entrance to Torres Straits can be seen until within five miles ; so that this beacon is of priceless importance to identify one's position at a distance.

The beacon tower was found by Captain Denham with its cupola broken down, and an utter destruction of all the timber and iron work, even to the rain water tank, was visible. It had been erected sixteen years before, and had been left to itself upon this desolate spot.

At first its utter ruin appeared to discourage restoration, but Captain Denham earnestly recommends its speedy repair. The work was beyond his resources. The lower chamber, floors, and stairs of the beacon was one rotted heap, which being cleared away, revealed some staves of casks and bleached meat bones, but no record of any visit or relief afforded by former supplies. These necessaries were restored by Captain Denham, acting under orders. Notwithstanding the decayed state of the tower beacon, it answers very well the purpose for which it was designed, viz., a seamark ; while for a refuge it would only be availed of for a day or two to recruit the wants of a wrecked crew. The building now presents, upon every aspect, a bulky castellated tower, forty-four feet high and thirty-six feet in diameter. The only crowning to this tower that is wanted is a lantern exhibiting a fixed white light. This would be a boon indeed, for it is a lighthouse that is wanted at the entrance to Torres Straits, and not merely a seamark.

The island offers stone and lime for the usual buildings of an establishment of this sort with an area of 788 yards by 422 of garden soil, while ample water might be cisterned to sustain the light keepers.

And should the turtle not be scared away, great inducements would offer for ships communicating, and thence the solitude would be mitigated and the stores replenished.

During the week the Herald lay off this island, Captain Denham lodged and secured from rain in the Tower, on the part of her Majesty, Queen Victoria, six casks of biscuit with a proportion of salt meat, flour, chocolate, rice, preserved meats, pickles, candles, lanthorn and matches, and fresh water; while the ship's company, in the true spirit of brother seamen, made up a contribution of pipes, tobacco, soap, blankets, and a variety of clothing, to which Captain Denham, on his own account, added a Bible, Testament, and Prayer Book, with a Coasting Directory and an abstract Nautical Almanack; and, finally, the gallant navigator left a bottled paper relating to his visit, with an exhortation that a careful use of the supplies might be observed in case of there being more than enough, so that others might have a chance.

Turtle are abundant at Raine Island. The boat's crew of the Herald turned 50 in one night, of which they selected the medium sized ones of about 250lbs., and released the rest. There was also upon the fungo reef abundance of beche-de-mer, the black sort being about nine inches long. Capt. Denham also mentions that he found there the largest clam-shells he had ever met with, some of which weighed 280lbs. after the fish was cut out, and measuring $2\frac{1}{2}$ feet long by 5 feet girth. Of the other means of subsistence to be found upon this island there are birds, but by no means so numerous as on some of the other islands in the coral sea. The eggs of the tern are plentiful, but the crew of the Herald did not care about them while in the midst of turtle, which, though cooked without the aldermanic condiments, refreshed the men and warded off scurvy. Indeed so satisfactory a diet can it be rendered as to husband the stock of biscuit, which in that climate is readily managed. To such an extent was this the case, that they were obliged to throw overboard nearly two thousand pounds. This of course enhanced the value of the turtle, especially as no fish can be taken. Fir sharks and devil fish seem to have dominion over the deep water fish, and the birds snapped up those near the surface.

But the real privation of the officers and men upon this long and arduous survey was "limited fresh water;" not more than six pints a day being allowed, for all purposes, per man; and rains were very precarious, and at the termination of the survey they suddenly ceased, which, added to the wearisome suffocating calms, greatly increased their sufferings. At last, after making three distinct starts, flattered by spurts of a south-easter, the ship got clear of the entanglements of the great detached reef. The delays occasioned by

the wind were truly disappointing, as the period was fast approaching when, for five months, it is considered mainly impossible to effect a passage in a sailing ship from Torres Strait to Sydney, the alternative being a circuit of this enormous island or continent, which entails a passage of 5,200 miles instead of 1,700. All this time, too, the men, and most of the officers, whose berths were below, had to endure an indescribable dreariness under the oppressive temperature of 90 degrees, under hatches ; inducing prickly heat, in aggravation of those sleep disturbing, food destroying, marauders, cockroaches, ants, and weavils.

The Herald is now on her way home, having been commissioned in June, 1852, at Chatham, and recommissioned in 1857, at Sydney, which is the longest commission known for many years.

FRIGHTFUL SHIPWRECK AND TERRIBLE SUFFERINGS OF PASSENGERS AND CREW.—Liverpool, Monday.—This Morning Messrs. W. Sinclair and Co. of this port, owners of the ship Sardinia, received a letter from Captain Nelson, master of that vessel, dated Rangoon, Dec. 12, in which the writer gives the most harrowing details of the sufferings and loss of life of a portion of the crew of the ship Queen of Martaban, from Moulmein to Calcutta, which was wrecked near Akyab. It appeared from Captain Nelson's letter that whilst on his passage from Akyab to Rangoon he fell in with the wreck of the Queen of Martaban, which had lost all her sails, the mainmast cut away, and it appeared that when on her beam ends the cabin was stove in, and she filled from the deck. When Captain Nelson came up to the wreck he found those of the crew and passengers who had remained by the ship (18 in number) in a most wretched state. They were suffering frightfully from hunger and thirst, not having tasted any food for 13 days ; the sea having swept everything away, and no means existing of communicating with the stores. The poor fellows when taken on board the Sardinia were in a state of great exhaustion, and more dead than alive, from the exposure to which they had been subjected, and the time during which they had been without food. They were taken on to Rangoon, and provided with fresh clothes and other necessaries. Captain Nelson further reports that, during his passage, he spoke the ship Inkerman, by which he learnt that the Inkerman had picked up four of the men belonging to the Queen of Martaban, who had abandoned the ship on a raft, two of whom perished. The body of one of these had been kept on the raft, in reserve for food, until they saw delivery at hand.
